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ABSTRACT

To study the differences in teachers' time allocations to various functions when volunteers were and were not present, as well as the differences in the amount of adult time spent with individual pupils in these sessions, an experimental design was employed that included a taxonomy of classroom functions based both on a theoretical framework and on direct observation. A total of 151 formal half-day observations in 22 elementary classrooms were recorded. The most important conclusion of the study is that when volunteers were present, teachers allocated more of their own time to instructional functions. A selected bibliography is included. (Author/MLF)

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VOLUNTEER PARENTAL ASSISTANCE IN ELEMENTARY SCHOOLS

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(Abstract)

Henry G. Hedges

Purpose and Background of the Study

Since the late 1960's a trend toward the greater use of volunteers in schools has become apparent. Unlike the earlier involvement of one or two volunteers per school, who assisted mainly in clerical or technical work or on field trips, the current pattern includes fairly large numbers of parents and other adults, and involves them in a wide variety of classroom functions, including instruction. This trend is duplicated in many places in the United States and in several Canadian provinces. To date, many volunteer programs have been poorly planned, organized and maintained, and almost none of them have been carefully evaluated.

During the period from 1966 to 1970 the author was engaged in four activities which together enabled him to identify some of the major strengths, possibilities, and shortcomings in volunteer programs. Briefly, these activities were as follows:

1. A detailed analysis of the Plowden Report (England) which describes a major correlation study of environmental factors and

pupil achievement; the main conclusion of the study was that the variation in parental attitudes accounts for more of the variation in children's school achievement than either the variation in home circumstances or the variations in schools. The report discusses a number of possible ways of improving parental attitudes, including direct involvement in school programs.

2. As co-ordinator of the research activities of the Provincial Committee on the Aims and Objectives of Education in the Province of Ontario (Hall-Dennis Committee), the author shared the responsibility of studying this topic and aiding the Committee to fit it into its report, Living and Learning. This report presented, both in the text and in the recommendations, a very strong case for the use of parents and other volunteers, to improve home-school communications and to enable teachers to devote a greater proportion of their time to professional tasks.

3. As one of the project directors in the Peterborough-O.I.S.E. activity entitled P.O.I.S.E., a co-ordinated curriculum project, the author gained the experience of involving parents and other volunteers as classroom supervisors to free teams of teachers for weekly meetings.

4. One of the first projects of the Niagara Centre of the Ontario Institute for Studies in Education concerned wider public involvement in education. In 1970 the author assisted the Centre with its survey of volunteer assistance in one hundred sample elementary schools. The report of the survey, published first in mimeographed form and later as an O.I.S.E. monograph under the title Volunteer Helpers in Elementary Schools, shows that 48 per cent of the schools had volunteer programs at that time, and another 19 per cent had

plans for initiating a program. The author's major contribution to the study was an analysis of the functions performed by volunteers, employing a taxonomy of classroom functions developed for the study; this activity represented the first phase of the present project.

On the basis of these experiences it was decided that the most pressing needs with respect to volunteers in schools were a systematic plan for initiating and maintaining a program, and research evidence concerning some of the effects of volunteer help on teachers' activities. Out of these fairly general needs, four main purposes of the present study were established, as follows:

1. The development of an operational model for a volunteer parents' assistance program in a school;
2. The implementation of the model in three schools with different characteristics, with evaluations to be conducted to assess certain general outcomes and effects including attitudes of teachers, parents, and pupils toward the program;
3. An experimental study to determine the effects of volunteer assistance on the time allocated by teachers to various functions; and
4. An extension of the experimental study to determine whether the use of volunteers increases the amount of adult time spent with individual pupils.

Before proceeding with these four main purposes of the study, two additional background activities were carried out--a survey of the literature and a provincial survey.

An analysis of one hundred selected articles and books on the

subject showed that most of them were descriptive, personal, and testimonial in style, and tended to focus on the programs in individual schools. Throughout the publications there was an almost complete absence of broad survey data, systematic objective evaluations, procedures for analyzing or categorizing the work of volunteers, and detailed plans for implementing a program. The most useful information in the literature is the evidence of widespread interest in the subject and the broad but unsystematic array of types of school activities supplemented by volunteer help. The evidence made it clear that the general use of such terms as "actual teaching" and "supportive" to describe the respective roles of teachers and volunteers was no longer in keeping with practices in classrooms.

A sample survey of forty school systems in Ontario showed that volunteer programs exist in 52 per cent of the schools in the sample. Almost every board has one or more schools with volunteer programs, and several have programs in every school. The participating schools have an average of 8.2 volunteers, who work an average of slightly over two hours or approximately one-half day per week. An analysis of the tasks performed by volunteers indicates that these include elements of supervisory, instructional and evaluative functions in addition to the supportive and clerical roles most often referred to in general reports from schools.

The Model and Its Implementation

The operational model was developed both for its general applicability to schools considering volunteer programs, and for the immediate purpose of establishing programs in three schools in which the experimental study would be conducted. In generalizing the results

of the experimental study, the implementation of the model or a similar model is regarded as part of the "treatment" to be replicated.

The operational model is outlined on a sequential basis, and is designed to give priority to such objectives as the improvement of parental attitudes toward the school program, the improvement of home-school communication, the provision of additional help in classrooms, and the improvement of parents' "teaching" skills.

The model includes six phases, with subordinate steps and sub-steps, and identifies the agent bearing the major responsibility for initiating or implementing each activity. The phases of the plan are as follows:

1. Preparation phase. This phase includes an analysis of staff readiness; identification of major needs; staff discussion and observation; agreement on policies, objectives and evaluation procedures; and the identification of initial tasks for volunteers.

2. Recruitment phase. The plan provides for meetings with parents; recruitment letters and questionnaires; and organization of files of regular, on-call, and talent bureau pools.

3. Induction phase. The model outlines initial meetings with volunteers; assignment of helpers to teachers; and preliminary training.

4. Maintenance phase. This phase includes procedures for maintaining the basic program; "promoting" volunteers to more challenging tasks; providing informal training; ensuring open communication; dealing with incidental problems, etc.

5. Evaluation phase. The model provides for week-by-week informal evaluation, and for a more systematic evaluation activity after the program has been well established; this phase includes

evaluation of changes in teacher activity, in grouping and individual attention, in attitudes of teachers, parents and pupils, and changes in pupil achievement.

6. Extension phase. This phase provides means of improving the co-ordination of the program; recruiting additional volunteers; expanding the program to meet broader needs of the school; and extending the program into the subsequent term or year.

During the 1970-71 school year, the author accepted invitations from three schools to assist them in implementing the model and documenting the program. A brief account of the documentation follows:

1. School S.D., a separate school in a large city, decided to include a volunteer program during its first year of operation in order to gain community support for its individualized program and open-space areas. The early commitment of the staff facilitated the readiness, recruitment, and induction phases, and accounts for much of the continued success of the program. All teachers made use of volunteers, assigning them first to supportive and clerical tasks and gradually training them to become more involved with instruction. The success of the program in gaining community support and in helping the teaching teams overcome problems of clerical needs and planning time was so evident that no formal evaluation phase was considered necessary in the initial year. The original program which involved about thirty parents has continued to expand in its second year.

2. The staff of School W.M., located in a medium-sized city, had considerable experience in curriculum development, and some experience with using volunteers as assistant supervisors prior to the implementation of the model. These factors no doubt accounted for the

ease with which the early phases of the model were implemented. The teachers' major objective, of additional adult time with individuals and small groups, established a pattern of a careful dovetailing of the abilities of certain volunteers with the needs expressed by teachers. About 60 per cent of the staff requested volunteer help; this group included a primary teacher, the entire junior team, the remedial speech teacher, and the library teacher. Ten of the regular corps of about 25 volunteers worked in the library; the remainder worked in classrooms, mainly in remedial instruction with individual pupils or consolidating content (listening to reading; drilling mathematics, etc.) with small groups. Throughout the year it was evident that the teachers' main objective of additional help was being satisfied, at least on the days when volunteers were present; also, the expressed attitudes of the pupils and volunteers were very positive. Therefore there was little interest in a more formal evaluation during this initial year of a comprehensive volunteer program. The successful implementation of the model in this school indicated that it is possible to graft the operational model onto an existing incomplete plan if the objectives of both are more or less in harmony.

3. School M.G. is a two-room rural primary school with a history of successful parental involvement. Instead of implementing the entire model in this school, the author agreed to make on-going comparisons of the existing program and the model, and provide for additional steps that might round out the program. The only major contribution of the model was a plan for a formal evaluation of the kindergarten program. In a carefully planned and administered evaluation, comparing the "experimental" group with three control groups

in other schools, it was found that the experimental group showed marked superiority over the controls in reading readiness, reading comprehension, spelling, and mathematics, and were not significantly different in tests of personal and social adjustment. The natural temptation may be to attribute the differences to the volunteer help, but other variables such as the program, teacher competency, and the use of a parents' manual may account for some or all the gains. This evaluation confirmed the difficulty of evaluating a volunteer program independently of other aspects of a school.

In all three schools the author made a general survey of attitudes and other outcomes, the findings of which are reported in the conclusions of the study.

Design of the Experimental Study

In order to study the differences in teachers' time allocations to various functions when volunteers were and were not present, and the differences in the amount of adult time spent with individual pupils in these sessions, an experimental design was employed which had the following features and steps:

1. A taxonomy of classroom functions was developed based both on a theoretical framework and on direct observation. The functions, which embrace all observed activities of adults in classrooms are listed below:

(1) Planning	a) Broad Planning b) Specific Planning
(2) Motivation	a) Broad Motivation b) Specific Motivation
(3) Instruction Sequence	a) Initiating a concept, attitude or skill b) Consolidating a new concept, attitude or skill

c) Adding content to structure
d) Consolidating content

(4) Supervision
a) Active Supervision
b) Passive Supervision

(5) Technical
a) Skilled Technical
b) Non-skilled Technical

(6) Non-Technical

(7) Evaluation and Remediation
a) Designing of instruments
b) Administration of tests
c) Objective Marking
d) Subjective Marking
e) Interpretation of scores
f) Diagnosis and Prescription
g) Remedial Teaching

(8) Guidance and Support

(9) Hiatus, Interruption and Non-Coded

A unique aspect of the taxonomy is its treatment of the instructional sequence; the other functions are more or less self-explanatory. In the taxonomy, instruction is sub-divided to distinguish among four separate functions--(a) first the teacher provides an experience that develops in the child's mind the new structure in question (initiating a new concept, attitude, or skill); (b) at this point the new structure is tenuous and might be readily forgotten, so the teacher has the learner repeat or use the process several times (consolidating the new concept, etc.); (c) then the teacher arranges opportunities to use the new learning outside the original learning context (adding content to structure); and (d) finally the teacher provides review, drill, or practice in which a standard of performance is implied (consolidating new content).

2. A manual was prepared which enabled independent observers to categorize all classroom activities of adults in appropriate functions.

With the manual and a training period, inter-observer reliability in excess of ninety per cent was maintained.

3. The taxonomy and manual were submitted to three panels of ten independent referees--teachers, teacher educators, and administrators, requesting that they rank the functions to form a hierarchy reflecting the relative importance of each function. Coefficients of correlation within each panel and among the three panels were in excess of .810, indicating a significant level of concordance. By deleting the last category, three levels of functions were established, using the rank orders determined by the referees. The three levels may be observed in Table 1 on page 15.

4. An observation schedule was prepared, based on the functions listed in (1) above. The purpose of the schedule was the recording of teachers' time allocations to each function, a procedure requiring the classification of each activity in keeping with the manual. The schedule also provided six columns to indicate whether the functions were performed with the entire class, a group, or an individual pupil, and whether for each of these groupings the basis was "regular" or "special".

5. The observation schedule, based on half-days (150 minutes) of observation in each session, was applied in the three study schools in all the classrooms where volunteers were regularly involved. First a series of observers' training sessions was held in each classroom, to reduce observer effects, improve inter-observer reliability, and determine the degree of stability of teacher performance in parallel time periods. Then, in each classroom, formal observations were made in paired sessions, the first session being a regular half-day with

the teacher working alone (the A session) and the second a parallel time period in which a volunteer was working with the teacher (the W session). In the A session the activities of the teacher were recorded; in the W session separate reports were kept for the teacher and the volunteer.

The design employed may be simply diagrammed as follows:

$$P\ P\ O_1\ O_2\ (O_3\ XO_4)\ (O_5\ XO_6)\ (O_v\ XO_w)\ O_y\ O_z\ \ldots\ldots$$

In the diagram P refers to preliminary visits; O refers to observations of the teacher working alone (the A sessions); XO refers to observations in the experimental (W) sessions when the independent variable of volunteer help was present. Brackets enclose the pairs of sessions to be compared with respect to differences in the teacher's time allocations to various functions and the total adult time spent with individual pupils. The elapsed time between O and XO sessions in each pair was kept to a minimum, and the time between pairs of sessions was randomized as far as was practical. The main purpose of the independent O sessions (O_1, O_2, O_y, etc.) was to check the stability of teacher performance.

This design is a combination of two classic quasi-experimental designs. The first of these, the Time-Series Design uses a periodic observation process with the introduction of an experimental change, the results of which are indicated by a discontinuity in the measurements in the series. This design is diagrammed as follows:

$$O_1\ O_2\ O_3\ XO_4\ O_5\ O_6\ O_7\ \ldots\ldots .O_y\ O_z$$

The second of the designs is the Equivalent Time Samples Design, which

employs two equivalent samples of time, one in which the experimental variable is present, and in the other it is absent. This design is diagrammed as follows:

$$X_1O \quad X_0O \quad X_1O \quad X_0O \quad \ldots\ldots$$

In this diagram, X_1 refers to the presence of and X_0 the absence of the experimental variable.

The design used in the present study incorporates the form of the time-series design as a means of establishing the level of stability, and the main advantage of the equivalent time-sample design in reducing the threat of rival variables accounting for the effects observed.

The design does not employ either sampling procedures or control groups. What has been sacrificed in these respects by employing the present design is more than compensated for by employing three versions of the treatment (i.e. three schools with different characteristics that may have influenced the implementation of the model), and by involving the entire accessible population (i.e. the teachers who were involved in the implementation of the model, followed by the regular use of volunteer help). These two conditions enhanced the generalizability of the findings.

The design and its application provided conditions that controlled the usual alternative explanations of the changes recorded in the dependent variable (i.e. different time allocations to various functions)--stability of teacher performance, inter-observer reliability, validity of observation instruments, observer effects, maturation of the teachers, effects of testing, changes in instrumentation, statis-

tical regression, experimental mortality, and specific factors such as direction or pressure from supervisors, the press, etc. The one threat to internal validity that is generally associated with the time-series design, history (the influence of other important events) is largely controlled by repeating the (O XO) sessions, as shown in the diagram.

The target population is defined as those elementary teachers who will experience the same or a similar "treatment" as the teachers in the study schools, i.e. involvement in implementing a similar program. Assuming that the trend toward greater use of volunteers continues, this target population may be from 30 to 50 per cent of Ontario's elementary teachers. In assessing the applicability of the conclusions to the population (external validity) it is argued that of the usual threats to the generalizability of the findings and the replication of the treatment, the model deals adequately with interaction of the treatment and personological variables of teachers, problems of adequate description of the treatment, multiple treatment interference, novelty and disruption effects, pre-test sensitization, and interaction of the time of treatment and measurement. It suffers to some extent from three conditions with respect to external validity--Hawthorne effect, interaction of history and the treatment, and the presence of the author as developer of the model.

Two restrictions on generalizability of this type of study are recognized by Campbell and Stanley (1963)--the treatment can be generalized only to conditions of repetitious and periodic presentations of the treatment; and the findings can be generalized only to the period of the actual presence of the treatment. Both of these

restrictions are recognized in the study, which deals only with changes accompanying the actual presence of the volunteers, a situation which is both repetitious and periodic.

Analysis of the Data

For the 22 classrooms in the study, a total of 151 formal half-day observations were recorded. One of the (O XO) pairs, namely the last pair in each classroom, provided the data for the main analysis. It was found that teacher stability ranged from 73 per cent to 91 per cent (median 84 per cent) by functions and from 85 per cent to 98 per cent (median 93 per cent) by grouping. The changes from day to day were not in any particular direction, and were minor in comparison to the changes between the regular and the experimental sessions.

The data for each teacher were summarized on a single sheet, a sample of which is shown in Table 1. Note the use of a code to protect anonymity. Hereafter, the sessions are referred to as A (Alone) and W (With volunteer).

The data were analyzed in six different categories or classes, as follows, with each teacher appearing in several classes because of variables of division and school:

1. Individual teachers;
2. Divisions within schools;
3. Divisions across schools;
4. Individual schools;
5. Other teacher variables, including sex, experience, area of operation (classroom or open space) and interaction with curriculum constraints;
6. The entire experimental group.

TABLE 1. --Time Distribution Data for One Sample Pair of Half-Day Observations of One Teacher, with Regular Session at the Left and Experimental Session at the Right

SCHOOL M.G. DATE Mar. 11/71 DATE Mar. 15/71

TEACHER MGT1A A.M. or P.M. a.m. A.M. or P.M. a.m.

PERSON OBSERVED MGT1A OBSERVER H.G.H. OBSERVER H.G.H.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning								10						10
Broad Motivation								10						10
Specific Planning	4				8		12	8				16		24
Specific Motivation	11						11							
Initiating a concept, attitude or skill					2		2					4		4
Consolidating a new concept, attitude or skill					5		5					14		14
Guidance and Support					1		1					4		4
TOTAL LEVEL 1	15				16		31	28				38		66
Adding content to a ructure	8		24		13		45	16				20		36
Diagnosis and Prescription					5		5					10		10
Active Supervision	9			1	9		19	4				10		14
Designing of Instruments														
Consolidating content	2		16		7		25	4				18		22
Remedial Teaching					10		10							
Interpretation of scores														
TOTAL LEVEL 2	19		40	1	44		104	34				58		82
Subjective Marking														
Skilled Technical														
Administration of tests														
Passive Supervision	7				8		15	2						2
Objective Marking														
Non-skilled Technical														
Non-technical														
TOTAL LEVEL 3	7				8		15	2						2
GRAND TOTAL	41		40	1	68		150	54				96		150

In dealing with the hypothesis concerning transfer of time to higher level functions, the main attention was directed toward the three levels of functions, and the differences in time allocations among the levels for the A and W sessions. Transfers to Level 1 were of prime concern.

For each of the classes listed above, three forms of analysis were employed, as follows:

(a) Tests of significance of the differences in time distribution. For this purpose the sign test was applied to the seven functions in Level 1. An increase in all seven functions has a probability of .008; six of seven has a probability of .07. While it is not possible, then, to establish a level of significance at the $< .001$ level for individual teachers, the sign test has potential for establishing a high level of significance for a group of teachers, by multiplying the independent probabilities of the members. Using this procedure it was found that for almost all the classes H_0 was rejected at the $< .01$ level of significance.

(b) Identification of important percentage changes in the time allocated to various functions. In general, large percentage changes were noted only where important amounts of time were also involved. In cases where one or both values showed low readings, the resulting percentage changes were naturally distorted or exaggerated, and thus were not treated in the analysis.

(c) Estimate of the relative importance of transfers of time, based on the three-level division, with changes in Level 1 accounted for by reference to the other levels. To emphasize the importance of transfers from low to high levels, a weighting system of ∓ 1 and

÷ 2 was applied to each minute transferred to another level, and the overall weighted transfer was noted.

Conclusions

1. The most important conclusion of the study is that when volunteers were present, teachers allocated more of their own time to functions in the upper level of the hierarchy of functions. As a group, the teachers transferred 21 per cent of their time to the seven functions in the top third of the hierarchy, thereby more than doubling their time in these functions (see Table 2). As a group, primary teachers showed greater amounts of time transfer than junior division teachers. Experience and sex of the teachers appeared to be less important than the division of the school, with respect to differences in time transfers. It is assumed that the amount of time re-allocated at the junior division level is influenced to a greater degree than at the primary level by curriculum constraints, time-tables, difficulty of content, and disciplinary considerations. Most of the time transferred to Level 1 was accounted for by reductions in the lowest third of the hierarchy. The functions receiving the greatest increases both in minutes and as percentages were initiating new mental structures, specific planning, remedial teaching, and diagnosis and prescription. At the other end of the hierarchy, the teachers spent less than half as much time in the third level when volunteers were present, and also reduced their time in certain middle level functions. The largest decreases were in active and passive supervision, consolidating content, and technical and non-technical work.

A comparison of the allocations in the regular and the experi-

LE 2. --Time Distribution Data for All Twenty-two Teachers in the Study, Based on One-Half Day (150 Minutes) for Each; A Sessions on the Left and W on the Right

HOOL SD, WM, MG DATE DATE

ACHER GRAND TOTAL (22) A.M. or P.M. A.M. or P.M.

SON OBSERVED OBSERVER OBSERVER

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	3						3	76		6		6	5	93
Broad Motivation	60		1	7		2	70	47		23	3	10		83
Specific Planning	95	7	41	13	20	2	178	261		75	33	62	14	445
Specific Motivation	52		6		2		60	11		41	12	19	10	93
Initiating a concept, attitude or skill	59		15	10	16		100	93		99	45	73	16	326
Consolidating a new concept, attitude or skill	57	12	33	6	29	1	138	38		65	40	34	13	190
Guidance and Support	17		5	13	32	7	74	11		2	8	34	20	75
TOTAL LEVEL 1	343	19	101	49	99	12	623	537		311	141	238	78	1305
Adding content to structure	211	4	116		100	5	436	123		98	18	151	8	398
Diagnosis and Prescription	10		1	6	54	24	95	2		4		135	26	167
Active Supervision	407	12	87	54	33	22	615	246		80		21		347
Designing of Instruments														
Consolidating content	338	4	106	54	189	21	712	96		143	21	246	20	520
Remedial Teaching	10		9	9	43	40	111	4		17	30	108	21	240
Interpretation of scores						3	3					8		8
TOTAL LEVEL 2	976	20	319	123	419	115	1972	471		342	69	729	75	1686
Subjective Marking	9		5		5		19			2		7		9
Skilled Technical	41		7				48	2				2		4
Administration of tests	19			9			28			13			2	15
Passive Supervision	324		27		8		359	141		17		3		161
Objective Marking	35		12				47	32		12		37		81
Non-skilled Technical	115		7			3	125	19				5		24
Non-technical	62		14		3		79	7		2		6		15
TOTAL LEVEL 3	605		72	9	16	3	705	210		46		60		309
GRAND TOTAL	1924	39	492	181	534	130	3300	1209		699	210	1027	155	3300

mental sessions showed that the doubling of adult time in the classroom also resulted in a distribution of time to the three levels of functions which approximated the doubling of a teacher's normal time distribution. In other words, the addition of volunteer help did not merely add to the clerical, technical, and supervision activities, but in fact enabled the teacher to re-allocate time so that the distribution of time to highest, middle, and lowest level functions was approximately doubled (see Table 3).

TABLE 3. Total Times and Percentages in Each Level of Functions, by Teachers in A and W Sessions, and Volunteers in W Sessions, All Data Based on Twenty-Two Observations of 150 Minutes Each

	Teachers A	Teachers W	Volunteers W	Total W
LEVEL 1				
Time	623	1305	266	1521
Per cent	19	40	8	23
LEVEL 2				
Time	1972	1686	1506	3192
Per cent	60	51	46	49
LEVEL 3				
Time	705	309	1528	1837
Per cent	21	9	46	28
TOTALS				
Time	3300	3300	3300	6600
Per cent	100	100	100	100

2. During the periods when volunteers were present the amount of adult time spent with individual pupils more than tripled. It will

TABLE 4.--Time Spent With Individual Pupils in Half-Day Sessions in Twenty-Two Classrooms, With A Sessions at the Left (Teachers Alone) and B Sessions at the Right (Teachers Plus Volunteers)

	"A" SESSION			"B" SESSION		
	Ind. Reg.	Ind. Sp.	Total	Ind. Reg.	Ind. Sp.	Total
TEACHERS	534	130	664	1027	155	1182
VOLUNTEERS				637	383	1020
TOTALS	534	130	664	1664	538	2202

be seen by studying Table 4 that the increased time was not provided only by volunteers; the teachers themselves spent nearly twice as much time with individual pupils during the volunteer sessions. Despite the large percentage increase, based on average figures of 30 minutes (regular) and 100 minutes (experimental) per half-day in each classroom, the average individual time per child, based on a class enrolment of 25 pupils, increased from 1 1/6 minutes to 4 minutes. Thus it is questionable whether the problems of meeting individual levels and interests can be satisfied merely by adding one volunteer to the classroom.

3. The data, collected by direct observation, confirmed the findings of the Niagara Survey, which were based on principals' reports, that volunteers perform a wide range of classroom functions, many of which are clearly in the areas of planning, instruction and evaluation (see Table 5). This conclusion indicates that future dialogue

TABLE 5. -- Total Time Distribution Data for the Volunteers in Twenty-Two Classrooms in W Sessions of One-Half Day Each; Sessions Correspond to the W Sessions in Table 45.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning							
Broad Motivation	17	10	22			5	54
Specific Planning	34		2	15	28	31	110
Specific Motivation							
Initiating a concept, attitude or skill				13			13
Consolidating a new concept, attitude or skill			15		25	5	45
Guidance and Support	15	3	13	3	7	3	44
TOTAL LEVEL 1	66	13	52	31	60	44	266
Adding content to structure			82	4	158	14	258
Diagnosis and Prescription	2				8	22	32
Active Supervision	163	10	204	64	69	13	523
Designing of Instruments							
Consolidating content	50	3	120	11	215	170	569
Remedial Teaching		1			65	50	116
Interpretation of scores						8	8
TOTAL LEVEL 2	215	14	406	79	515	277	1506
Subjective Marking							
Skilled Technical	225				8	8	241
Administration of tests			15			25	40
Passive Supervision	192	7	33	31	9	10	282
Objective Marking	138	9	8	3	18	1	177
Non-skilled Technical	629	22	44	18	10	16	739
Non-technical	27		3	2	17	2	49
TOTAL LEVEL 3	1211	38	101	54	62	62	1528
GRAND TOTAL	1492	65	559	164	637	383	3300

on the respective roles of teachers and volunteers should transcend the assumed dichotomies of "actual teaching" and "supportive" -- or "teaching" and "non-teaching"--and recognize that a wide range of roles exists, most of which are shared in varying proportions by the two adults, with the proportions influenced by many variables including difficulty of the task, competency of the volunteer, security and flexibility of the teacher, etc.

4. Teachers' evaluations, supported by the direct observations made and the evidence of "promotion" of their helpers to more challenging assignments indicated that parent volunteers were able to perform successfully a large number of classroom tasks.

5. A survey of attitudes and outcomes of the programs in the study schools showed the parents stated that the program gave them a better understanding of school programs and of their own children's progress.

6. The attitude survey also showed that attitudes of parents and teachers changed in the direction of more positive attitudes toward each other and toward the volunteer program.

7. Some parents are able to apply at home certain school-related teaching activities. The activities supporting this conclusion were documented in only one of the study schools, wherein a parents' manual was used. However, the strong evaluative data for the pupils' achievement in this school indicates that this is a fruitful area for more extensive development.

8. Teachers individually or as teams had more time for planning during volunteer sessions. This objective of volunteer programs was successfully achieved, as evidenced both by teachers' statements

concerning important changes resulting from volunteer help, and from the observations in the experimental study, as shown in Table 2. Observations showed that during volunteer sessions teachers' planning time increased from 5.5 per cent to 16.5 per cent of their total classroom time, an increase of 200 per cent. Many of the teachers cited this as one of the greatest advantages of the program.

Other Outcomes of the Study

In addition to the conclusions summarized above, the study had a number of other outcomes which may make a contribution to further programs or studies.

1. The hierarchy of functions represents a standard for judging the relative importance of various classroom functions, which may be useful in considering ways of utilizing teacher time to maximum advantage.

2. The operational model accompanied by various development materials has potential for assisting any school planning to initiate a volunteer program.

3. The documented implementation of the model in three different schools can provide other schools with information that may allay concerns and difficulties that can be anticipated in future developments.

4. The study proposes fifteen extensions in the form of models designed to meet specific major school needs, as follows, several of which have been subsequently implemented as development projects:

(a) Model for staff curriculum development;

(b) Special education plan;

(c) Professional specialization proposal;

(d) Secondary school model;

(e) Differentiated staffing proposal;

(f) Integrated reading adaptation;

(g) Observation-evaluation plan;

(h) "Mini-school" development;

(i) Community "talent bureau";

(j) Extended day program;

(k) Proposal for dealing with emotional problems;

(l) Model for second language assistance;

(m) Plan for involving lay readers;

(n) Extension for enrichment programs;

(o) Adaptations involving college students; and

(p) Model for community consultation.

The critical decisions concerning the use of volunteers in schools will probably continue to be made by principals and teachers. It is reasonable to expect that such decisions will increasingly be made on the basis of available evidence concerning successful programs in typical schools and the effects of such programs on the work of teachers and the achievement of pupils. In view of current concerns of the profession with respect to individualizing programs and the need for time for planning and curriculum development, the findings of this study should help to support the extension of comprehensive programs of volunteer assistance. While initially such programs will be judged on their direct contributions to teachers' activities, in the long run they may prove to have equally important effects on parental understanding of school programs and improvements in pupil achievement resulting from more positive parental attitudes.

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